

Serial No. 09/498,064  
Docket No. N99135G-US

2

AMENDMENTS TO THE CLAIMS:

Claim 1. (Currently amended) A liquid-crystal display device comprising:  
a plurality of address wires formed on an insulating substrate;  
a gate insulating film formed on said address wires and on said insulating substrate;  
a plurality of data wires, said data wires crossing said address wires;  
an upper layer insulating film formed on said data wires and on said gate insulating film, said upper layer insulating film having a smaller thickness and higher dielectric constant than the gate insulating film; and  
a picture element area comprising:  
a transparent electrode, comprising a transparent conductive film, formed on said upper layer insulating film and surrounded by said address wires and said data wires;  
a thin-film transistor section for selectively connecting said data wires with said transparent electrode by a gate connected to said address wires; and  
a capacitor section comprising:  
a first electrode formed on said gate insulating film and comprising the same conductive film as in said data wires, and having an innermost portion formed over said address wires;  
a second electrode on said upper layer insulating film and comprising the same transparent conductive film as in said transparent electrode; and  
at least a portion of said upper layer insulating film formed between said first electrode and said second electrode.

Claim 2. (Previously amended) The liquid-crystal display device according to claim 1, wherein said second electrode comprises an extended part of said transparent electrode.

Claim 3. (Currently amended) The liquid-crystal display device according to claim 1, wherein said first electrode is connected to said address wires wirings by the same transparent conductive film as used for said transparent electrode.

Serial No. 09/498,064  
Docket No. N99135G-US

3

Claim 4. (Currently amended) The liquid-crystal display device according to claim 1, wherein said first electrode is connected to said address wires wirings by the same conductive film as in said data wires wirings.

Claim 5. (Currently amended) The liquid-crystal display device according to claim 1, wherein a part of said capacitor section is superimposed through said gate insulating film on said address wires wirings.

Claim 6. (Currently amended) The liquid-crystal display device according to claim 1, wherein a width of said address wires wirings is constant in said picture element area and wherein said capacitor section is entirely superimposed through said gate insulating film on said address wires wirings.

Claim 7. (Currently amended) The liquid-crystal display device according to claim 1, wherein said thin-film transistor section and said data wires wirings are covered with one of said upper layer insulating film and said transparent conductive film.

Claim 8. (Previously amended) The liquid-crystal display device according to claim 1, wherein one of said upper layer insulating film has a thickness which is less than a thickness of said gate insulating film, and a dielectric constant of said upper layer insulating film is greater than a dielectric constant of said gate insulating film.

Claim 9. (Previously amended) The liquid-crystal display device according to claim 1, wherein said upper layer insulating film comprises a complex film comprising a plurality of insulating films.

Claim 10. (Previously amended) The liquid-crystal display device according to claim 1, wherein said upper layer insulating film comprises at least one of a silicon nitride film, silicon oxide film and metal oxide film.

Serial No. 09/498,064  
Docket No. N99135G-US

4

Claim 11. (Currently amended) The liquid-crystal display device according to claim 1, wherein an auxiliary capacitive common wiring is formed in parallel with said address wires wirings and wherein said capacitor section is one of partially and totally superimposed on said auxiliary capacitive common wiring.

Claim 12. (Currently amended) The liquid-crystal display device according to claim 11, wherein at least two connections are made between said first electrode and said address wires wirings or between said first electrode and said auxiliary capacitive common wiring.

Claim 13. (Currently amended) The liquid-crystal display device according to claim 1, wherein said capacitor section is formed by connecting, in parallel, a first capacitive component comprising a part of said address wires wirings, said first electrode and said gate insulating film being located between said address wires wirings and said first electrode with a second capacitive component comprising said first electrode, said second electrode and said upper layer insulating film being located between said first electrode and said second electrode.

Claim 14. (Currently amended) A method for producing the liquid-crystal display device of claim 1, comprising:

forming a plurality of address wires wiring on an insulating substrate;  
forming a gate insulating film on said address wiring and on said insulating substrate;  
forming a plurality of data wires wiring on said gate insulating film, so that said data wires wiring and said address wires wiring cross each other;

forming a thin-film transistor for selectively connecting said data wires wiring with said transparent electrode disposed in each picture element area by a gate connected to said address wires wiring, in each picture element area surrounded by said address wires wiring and data wires wiring;

forming a first electrode using the same conductive film as used to form said data wires, said first electrode having an innermost portion formed over said address wires wiring;  
forming an upper layer insulating film on said first electrode and on said gate.

Serial No. 09/498,064  
Docket No. N99135G-US

-5

insulating film, said upper layer insulating film having a smaller thickness than the gate insulating film;

forming a second electrode using the same transparent conductive film as used to form said transparent electrode; and

forming said capacitor section using said first electrode, said second electrode, and said upper layer insulating film.

Claim 15. (Previously amended) The method for producing the liquid-crystal display device according to claim 1, wherein said second electrode comprises an extended part of said transparent electrode in said capacitor section.

Claim 16. (Currently amended) The method for producing the liquid-crystal display device according to claim 14, wherein said first electrode is connected to said address wires wirings by the same transparent conductive film as in said transparent electrode.

Claim 17. (Currently amended) The method for producing the liquid-crystal display device according to claim 14, wherein said first electrode is connected to said address wires wirings by the same conductive film as in said data wires wirings.

Claim 18. (Currently amended) A method for producing the liquid-crystal display device of claim 11, comprising:

forming a plurality of address wires wiring on an insulating substrate;

forming a plurality of auxiliary capacitive common wires wiring parallel with said address wires wiring;

forming a gate insulating film on said auxiliary capacitive common wires wiring and on said insulating substrate;

forming a plurality of data wires wiring on said gate insulating film, so that said address wires wiring and data wires wiring cross each other;

forming a thin-film transistor for selectively connecting said data wires wiring with said transparent electrode in each picture element area by a gate connected to said address

Serial No. 09/498,064  
Docket No. N99135G-US

6

wires wiring, in each picture element area surrounded by said address wires wiring and data wires wiring,  
wires wiring;

forming said first electrode using the same conductive film as used to form said data wires, said first electrode having an innermost portion formed over said address wires wiring;

forming said upper insulating film on said first electrode and on said gate insulating film, said upper layer insulating film having a smaller thickness than the gate insulating film;

forming said second electrode using the same transparent conductive film as used to form said transparent electrode; and

forming said capacitor section using said first electrode, said second electrode and said upper layer insulating film so that said capacitor is one of partially and totally superimposed on said auxiliary capacitive common wiring.

Claim 19. (Currently amended) The method for producing a liquid-crystal display device of claim 14, wherein said first electrode is connected to said transparent electrode and said second electrode is connected to said address wires wirings and wherein said capacitor section is mounted so that it is superimposed on a part of said address wires wirings.

Claim 20. (Currently amended) A method for producing the liquid-crystal display device of claim 4, comprising:

forming a plurality of address wires wiring on an insulating substrate;

forming a gate insulating film on said address wires wiring and on said insulating substrate;

forming, in said gate insulating film, a through hole which extends to said address wires wiring;

forming a plurality of data wires wiring on said gate insulating film so that said address wires wiring and data wires wiring cross each other;

forming a thin-film transistor for selectively connecting said data wires wiring with said transparent electrode in each picture element area by a gate connected to said address wires wiring, in each picture element area surrounded by said address wires wiring and data wires wiring;

Received from <703 761 2376> at 8/29/03 2:28:05 PM [Eastern Daylight Time]

Serial No. 09/498,064  
Docket No. N99135G-US

7

forming said first electrode using the same conductive film used to form said data wires, said first electrode having an innermost portion formed over said address wires wiring; connecting said first electrode to said address wires wiring via said through hole formed in said gate insulating film;

forming said upper layer insulating film on said first electrode and on said gate insulating film, said upper layer insulating film having a smaller thickness than the gate insulating film;

forming said second electrode using the same transparent conductive film used to form said transparent electrode; and

forming said capacitor section using said first electrode, said second electrode and said upper layer insulating film.

Claim 21. (Currently amended) The liquid-crystal display device of claim 13, wherein said first electrode is connected to said transparent electrode and said second electrode is connected to said address wires wirings and wherein said capacitor section is mounted so that it is superimposed on a part of said address wires wirings.

Claim 22. (Currently amended) A method of fabricating a liquid-crystal display device, said method comprising:

forming a plurality of address wires wiring on an insulating substrate;

forming a gate insulating film on said address wires wiring and on said insulating substrate;

forming a plurality of data wires wiring on said gate insulating film, so that said data wires wiring and said address wires wiring cross each other;

forming a thin-film transistor for selectively connecting said data wires wiring with a transparent electrode by a gate connected to said address wires wiring, said transparent electrode being located in a picture element area surrounded by said address wires wiring and data wires wiring;

forming a first electrode using the same conductive film as used to form said data wires, said first electrode having an innermost portion formed over said address wires wiring;

Serial No. 09/498,064  
Docket No. N99135G-US

8

forming an upper layer insulating film on said first electrode and on said gate insulating film, said upper layer insulating film having a smaller thickness than the gate insulating film;

forming a second electrode using the same transparent conductive film as used to form said transparent electrode; and

forming a capacitor section using said first electrode, said second electrode, and said upper layer insulating film.

**Claim 23.** (Previously added) A liquid-crystal display device according to claim 1, wherein, in said capacitor section, said address wires are formed directly on said insulating substrate, and said gate insulating film is formed directly on said address wires.

**Claim 24.** (Previously added) The liquid-crystal display device according to claim 1, wherein, in said capacitor section, said first electrode is formed directly on said gate insulating film, said upper layer insulating film is formed directly on said first electrode, and said second electrode is formed directly on said upper layer insulating film.

**Claim 25.** (Previously added) The liquid-crystal display device according to claim 24, wherein said first electrode comprises said data wires.

**Claim 26.** (Previously added) The liquid-crystal display device according to claim 24, wherein said second electrode comprises said transparent electrode.

**Claim 27.** (Previously added) The liquid-crystal display device according to claim 1, wherein said address wires and said first electrode are separated by a first single layer comprising said gate insulating film, and wherein said first electrode and said second electrode are separated by a second single layer comprising said upper insulating film.

**Claim 28.** (Currently amended) The liquid-crystal display device according to claim 22,

Serial No. 09/498,064  
Docket No. N99135G-US

9

wherein said forming said gate insulating film comprises forming said gate insulating film directly on said address wires wirings, and said forming said first electrode comprises forming said first electrode directly on said gate insulating film.

Claim 29. (Previously added) The liquid-crystal display device according to claim 22, wherein said forming said upper layer insulating film comprises forming said upper layer insulating film directly on said first electrode, and

said forming said second electrode comprises forming said second electrode directly on said upper layer insulating film.

Claim 30. (Previously added) The liquid-crystal display device according to claim 1, further comprising:

a black matrix filter formed on said capacitor section, wherein the capacitor section is superimposed upon said address wires.

Claim 31. (Currently amended) A liquid-crystal display device, comprising:

a plurality of address wires formed on an insulating substrate;  
a gate insulating film formed directly on said address wires and said insulating substrate;

a plurality of data wires formed directly on said gate insulating film, said data wires crossing said address wires;

an upper layer insulating film formed directly on said data wires and on said gate insulating film, said upper layer insulating film having a smaller thickness and higher dielectric constant than the gate insulating film;

a picture element area comprising:

a transparent electrode, comprising a transparent conductive film, formed directly on said upper layer insulating film and surrounded by said address wires and said data wires;

a thin-film transistor section for selectively connecting said data wires with said transparent electrode by a gate connected to said address wires, and

Serial No. 09/498,064  
Docket No. N99135G-US

10

a capacitor section comprising:

a first electrode, comprising said data wires, formed directly on said gate insulating film, and having an innermost portion formed over said address wires;

a second electrode, comprising said transparent electrode, formed directly on said upper layer insulating film, wherein said first electrode and said second electrode are separated by a single layer comprising said upper layer insulating film.

**Claim 32.** (Currently amended) A method for producing a liquid-crystal display device, comprising:

forming a plurality of address wires on an insulating substrate;

forming a gate insulating film directly on said address wires and said insulating substrate;

forming a plurality of data wires directly on said gate insulating film, said data wires crossing said address wires;

forming an upper layer insulating film directly on said data wires and on said gate insulating film, said upper layer insulating film having a smaller thickness and higher dielectric constant than the gate insulating film;

forming a picture element area comprising:

forming a transparent electrode, comprising a transparent conductive film, directly on said upper layer insulating film and surrounded by said address wires and said data wires;

forming a thin-film transistor section for selectively connecting said data wires with said transparent electrode by a gate connected to said address wires; and

forming a capacitor section comprising:

forming a first electrode, comprising said data wires, directly on said gate insulating film, said first electrode having an innermost portion formed over said address wires; and

forming a second electrode, comprising said transparent electrode, directly on said upper layer insulating film, wherein said first electrode and said second electrode are separated by a single layer comprising said upper layer insulating film.